

**Notice of Allowability**

Application No.

10/527,485

Examiner

Minerva Rivero

Applicant(s)

TSUKAMOTO ET AL.

Art Unit

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 8/21/06.
2. ☒ The allowed claim(s) is/are 2-9, 11-13 and 18-22.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 9/1/06
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material.

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

WAYNE YOUNG  
SUPERVISORY PATENT EXAMINER

### **DETAILED ACTION**

1. In the Remarks filed, Applicants amended claims 2-9, and 11-13, added claims 18-22, and cancelled claims 1, 10, and 14-17, and submitted a replacement Abstract.

### ***Response to Arguments***

2. Applicant's arguments, see Remarks, filed 8/21/06, with respect to claims 2-3, 5, and 11-12 have been fully considered and are persuasive. The 102 and 103 rejections of claims 2-3, 5, and 11-12 have been withdrawn.

### ***Allowable Subject Matter***

3. Claims 2-3, 5, 9, 11 and 12 are allowed.
4. Regarding claim 2, no reference alone or in combination, discloses wherein a delay time period T3 between a fall time of a data pulse corresponding to the first recording mark and a time at which the level of a pulse is switched from the level corresponding to the level of the recording power to the level corresponding to the level of the bottom power in the pulse train pattern used for forming the first recording mark is set so as to satisfy the formula below, wherein T3 (x1, y, z) is a delay time period T3 in

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the case of forming the first recording mark having length  $x_1$ , the blank region having length  $y$  after the formation of the first recording mark and the second recording mark having length  $z$  and  $T_3(x_2, y, z)$  is a delay time period  $T_3$  in the case of forming the first recording mark having length  $x_2$ , the blank region having length  $y$  after the formation of the first recording mark and the second recording mark having length  $z$ , where  $x_1$  is smaller than  $x_2$ .  $T_3(x_1, y, z) > T_3(x_2, y, z)$ . Therefore claim 2, and dependent claims 4, 6-8 and 13 are allowable.

5. Regarding claim 5, no reference alone or in combination discloses a delay time period  $T_3$  between a fall time of a data pulse corresponding to the first recording mark and a time at which the level of a pulse is switched from the level corresponding to the level of the recording power to the level corresponding to the level of the bottom power in the pulse train pattern used for forming the first recording mark is set so as to satisfy a formula below, wherein  $T_3(x, y, z_1)$  is a delay time period  $T_3$  in the case of forming the blank region having length  $y$  after the formation of the first recording mark having length  $x$  and the second recording mark having length of  $z_2$  and  $T_3(x, y, z_2)$  is a delay time period  $T_3$  in the case of forming the blank region having length  $y$  after the formation of the first recording mark having length  $x$  and the second recording mark having length  $z_2$ , where  $z_1$  is smaller than  $z_2$   $T_3(x, y, z_1) > T_3(x, y, z_2)$ . Therefore claim 5, and dependent claim 19 are allowable.

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6. Regarding claim 9, no reference alone or in combination discloses switching recording power levels in accordance with a normalized delay period  $T3'$  that is a function of recording velocity. Therefore, claim 9 and dependent claim 20, are allowable.

7. Regarding claim 11, no reference alone or in combination discloses a delay time period  $T1$  between a rise time of a data pulse corresponding to the first recording mark and a time at which the level of a pulse is switched from the level corresponding to the level of the bottom power to the level corresponding to the level for the recording power in the pulse train pattern used for forming the first recording mark is set so as to satisfy a formula below, wherein  $T1(a1, b)$  is a delay time period in the case of forming the first recording mark having a length  $b$  after formation of a blank region having a length  $a1$  and  $T1(a2, b)$  is a delay time in the case of forming the first recording mark having a length  $b$  after formation of a blank region having a length  $a2$  longer than  $a1$ .  $T1(a1, b) > T1(a2, b)$ . Therefore, claim 11 and dependent claim 21, are allowed.

8. Regarding claim 12, no reference alone or in combination discloses a delay time period  $T1$  between a rise time of a data pulse corresponding to the first recording mark and a time at which the level of a pulse is switched from the level corresponding to the level of the bottom power to the level corresponding to the level for the recording power in the pulse train pattern used for forming the first recording mark is set so as to satisfy a formula below, wherein  $T1(a, b1)$  is a delay time period in the case of forming the first

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recording mark having a length  $b1$  after formation of a blank region having a length  $a$  and  $T1(a, b2)$  is a delay time in the case of forming the first recording mark having a length  $b$  after formation of a blank region having a length  $b2$  longer than  $b1$ .  $T1(a, b1) > T1(a, b2)$ . Therefore, claim 12 and dependent claim 22, are allowed.

### **Conclusion**

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shoji *et al.* (US 2001/0005343) disclose a recording medium wherein optimum pulses of the first and last signal pulses are based on the data pattern which is determined beforehand to record marks in the correct position.

Sakaue *et al.* (US 5,745,467) disclose a mark length modulation recording scheme.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minerva Rivero whose telephone number is (571) 272-7626. The examiner can normally be reached on Monday-Friday 9:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MR 11/10/06



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